

Officials can't find E. coli link

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When two cases of E. coli infection involving children emerged last month near Carthage, and a third case involving a St. Louis child who visited Jasper County occurred at roughly the same time, health officials immediately suspected a common link.

That's because E. coli infections are rare. Three of them happening at the same time signals to communicable-disease investigators that a common source of exposure is likely.

"It was very suspicious," said Tony Moehr, director of the Jasper County Health Department. "We suspected a link early on because the probability of one was great. But, the evidence did not show any link. It's unusual to have two cases with similar onset dates without there being a link."

Dan Pekarek, director of the Joplin Health Department, shares the concern expressed by Moehr.

"Two unrelated cases at the same time statistically don't match," he said.

Not finding a common link among the cases does not mean one did not exist at some point. It could mean that the investigators, despite an intensive effort, could not find it. Still, it could be sheer chance that two unrelated cases emerged at the same time.

"It's more common not to find the link than you would think," said Brian Quinn, with the communicable-disease division of the Missouri Department of Health and Senior Services.

The outbreak started in late May and apparently has ended, with no other cases having been reported. One of the children from the Carthage area was the index case for multiple cases that subsequently emerged at a Joplin day-care center. The index child from Carthage and four children at the day-care center developed hemolytic uremic syndrome or kidney failure that required hospitalization. They have since recovered.

The other child from the Carthage area also developed the syndrome, but had no connection to the other child from Carthage and was not enrolled in the Joplin day-care center.

The outbreak affected a dozen or so children in the day-care center. The serious cases in the center were confirmed through lab tests as E. coli.

Part of the problem is that health investigators must reconstruct the activities of those affected by the illness about two weeks after initial exposure. The problem for the investigators is that a parent must be able to remember exactly what a child did within a specific time frame.

The investigation looked at what and where the children ate. It looked at water sources and possible recreational activities, such as swimming in a river that might have had high concentrations of E. coli bacteria.

"We looked at the ground meat they consumed and the grocery stores where it was purchased," Moehr said. "The beef came from different sources. One of the children does not eat beef products, only chicken. We tracked every piece of information we could find about their foods and their activities."

Investigators also checked beef-recall records. There was a beef recall shortly before the outbreak, but none of the suspect beef was shipped to this area based on shipping records, Moehr said.

The investigation also looked at whether the children had visited any farms where they might have been exposed to the bacteria via contact with cattle.

Each year in the United States, an estimated 73,000 cases of infection and 61 deaths occur because of E. coli, according to the federal Centers for Disease Control and Prevention. Most illnesses are associated with eating undercooked ground beef. Person-to-person contact within families and child-care centers also is a factor.

Pekarek said it is likely that the source of the exposure involved the children's environment. One of the more prominent possibilities is improperly cooked hamburger.

The E. coli organism lives in the intestines of healthy cattle. Meat can become contaminated during slaughter. The organisms can be thoroughly mixed into beef when it is ground. If the ground beef is not thoroughly cooked, the bacteria survive and can be ingested.

Pekarek said that while no information was released to the general public about the outbreak, the families with children in the day-care center were notified, as were local hospitals.

"We did that because there was no community base to it," he said. "We do public announcements when the public is involved. The hepatitis A outbreak in 1995 was community-based. The 1997 meningitis outbreak was community-based. More recently, West Nile virus has become a community-based situation.

"If unrelated cases of E. coli had started popping up, we would have advised the public."

Quinn, with the Missouri Department of Health, said: "Public health departments typically notify the potentially affected population. In this case, it was standard operating procedure to notify the parents of the children at the day-care center.

"If it had been a restaurant, a wider notification would have gone out."